

## **Innovative Zero Liquid Discharge System for Waste Water Management in Solvent Extraction Plants**

**Mr. Sameer Kapadia**  
**General Manager – Sales & Marketing**  
**Kumar Metal Industries, Mumbai**  
**kapadia@kumarmetal.com**

The waste water generated by a Solvent Extraction Plant can indeed pose significant environmental and operational challenges. An Innovative approach of Zero Liquid Discharge (ZLD) System addresses these issues by offering an efficient solution for handling the waste water produced by the plant, particularly from the extensive use of sparge steam in various vessels such as the desolventiser, oil stripper, mineral oil stripper, and the waste water reboiler.

The key benefits of implementing ZLD System are as follows:

1. **Zero Liquid Discharge:** The system ensures that no waste water is discharged into the environment, which helps in compliance with increasingly stringent environmental regulations. This can significantly reduce the plant's environmental impact and the associated costs of waste water treatment and disposal.
2. **Operational Efficiency:** By capturing and reusing the waste water, the ZLD system can improve the overall water management in the plant. It minimizes the need for fresh water intake, which can be a valuable resource conservation measure.
3. **Cost Savings:** The ZLD system reduces the costs associated with waste water disposal and treatment, as well as potential fines or penalties for exceeding discharge limits. It also helps in reducing energy costs by recovering heat from the waste water, which can be utilized for other plant processes.
4. **Sustainability:** The system contributes to the sustainability goals of the plant by reducing its carbon footprint and conserving valuable natural resources like water.

In summary, the Zero Liquid Discharge System provides a comprehensive solution for waste water management, improving both the environmental and economic performance of Solvent Extraction Plants.